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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,388	12/06/2004	Michael Francis Edwards	743414-16	9007

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EXAMINER

VU, MINDY D

ART UNIT	PAPER NUMBER
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2884

DATE MAILED: 07/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/500,388	Applicant(s) EDWARDS ET AL.	
	Examiner Mindy Vu	Art Unit 2884	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

This Office Action is in response to Applicant's application filed December 06, 2004.

National Stage Application

The Examiner has considered the international preliminary examination report (IPER).

Information Disclosure Statement

The listing of references in the Search Report is not considered to be an information disclosure statement (IDS) complying with 37 CFR 1.98. 37 CFR 1.98(a)(2) requires a legible copy of: (1) each foreign patent; (2) each publication or that portion which caused it to be listed; (3) for each cited pending U.S. application, the application specification including claims, and any drawing of the application, or that portion of the application which caused it to be listed including any claims directed to that portion, unless the cited pending U.S. application is stored in the Image File Wrapper (IFW) system; and (4) all other information, or that portion which caused it to be listed. In addition, each IDS must include a list of all patents, publications, applications, or other information submitted for consideration by the Office (see 37 CFR 1.98(a)(1) and (b)), and MPEP § 609.04(a), subsection I. states, "the list ... must be submitted on a separate paper." Therefore, the references cited in the Search Report have not been considered. Applicant is advised that the date of submission of any item of information or any missing element(s) will be the date of submission for purposes of determining

compliance with the requirements based on the time of filing the IDS, including all "statement" requirements of 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griebel et al. (US 6,157,034, hereafter Griebel).

With respect to independent Claim 1, Griebel discloses a bulk material analysis (Abstract) for analysis of bulk material 26 on a conveyor belt 24 passing through the analyzer between a radiation source 62 and a radiation detector 64 (Fig. 5), said analyzer extending around an open-sided aperture for passage of said belt, said

housing being substantially filled with radiation shielding material to provide radiation shielding around said aperture, and a removable block 18 of radiation shielding material to close the open side of said aperture and provide surrounding radiation shielding of said aperture (Fig. 1 & Col. 5 lines 57-67 and Col. 6 lines 1-11).

Even though Griebel discloses the analyzer as a three-part assembly with upper primary module 10, lower primary module 12 and a set of replaceable side modules 18 (Fig. 1), it would have been obvious to one of ordinary skill in the art at the time of the invention was made to see the C-shape of the housing by the removal of a side module 18.

With respect to Claim 2, Griebel discloses a moderator insert is fitted into said aperture to at least partially define a conveyor passageway (Col. 7 lines 18-28).

With respect to Claim 3, Griebel discloses the removable block of shielding material includes an inner portion of moderator material that also partially defines the conveyor passageway (Fig. 3).

With respect to Claim 4, Griebel discloses a radiation source is disposed within the moderator insert (Fig. 5).

With respect to Claim 5, Griebel discloses a radiation detector is located in the shielding on the side of the aperture remote from said source (Fig. 5).

With respect to Claim 6, Griebel discloses the moderator insert and the removable block of shielding material combine to form a flat-bottomed V-shaped passageway for the conveyor belt (Fig. 1).

With respect to Claim 7, Griebel discloses the moderator insert is surrounded by radiation shielding material on all sides (Col. 7 lines 18-28).

With respect to Claim 8, Griebel discloses the moderator insert includes a rectangular block 48 of secondary neutron moderator positioned below said V-shaped passageway (Fig. 5).

Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griebel et al. (US 6,157,034, hereafter Griebel) in view of Atwell et al. (US 5,732,115, hereafter Atwell).

With respect to Claim 9, Griebel discloses a block of secondary neutron moderator but lacks an insert of primary neutron moderator. Atwell discloses a similar bulk material analyzer including a primary neutron moderator 20 inside of a secondary neutron moderator 22 (Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to insert a primary neutron moderator on top of a gamma-ray shielding material as suggested by Atwell in view of reducing the velocity of the neutrons emitted from the neutron sources (Col. 4 lines 5-10).

With respect to Claim 10, Griebel discloses the moderator insert includes a triangular block of secondary neutron moderator defining one side of said V-shaped passageway (Fig. 5).

With respect to Claim 11, Griebel discloses the inner portion of moderator material of said removable block is a triangular block of secondary neutron moderator (Figs. 3 & 5).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Griebel et al. (US 6,157,034, hereafter Griebel) in view of Atwell et al. (US 5,396,071, hereafter Atwell).

With respect to Claim 12, Griebel discloses the shielding material but does not describe how it was assembled. Atwell discloses a bulk material analyzer having the shielding material is cast within the modules upon manufacture of the modules (Col. 4 lines 11-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to cast the shielding material as suggested by Atwell since it is one of the well known methods to deal with shielding material in bulk material analyzer.

With respect to Claim 13, Atwell disclose the shielding material is cast but lacks the cast neutron shielding is substantially 60% Polyethylene Beads by weight, 20% Borax by weight and 20% Polyester Resin by weight. However, since the specification did not disclose how those specific composition would have any special impact on the shielding, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to choose the appropriate material for casting.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US 3,794,843) in view of Griebel et al. (US 6,157,034, hereafter Griebel).

With respect to independent Claim 14, Chen discloses a method of assembly of a bulk material analyzer (Abstract) for analysis of bulk material 14 on a conveyor belt 12 passing through the analyzer 10 between a radiation source 191 and a radiation detector 22, said method including the steps of forming a generally C-shaped housing 10 around an open-sided aperture for passage of said conveyor belt 12 (Figs. 1 & 10).

Chen discloses the shielding in different parts of the housing for the purpose of preventing radiation from gamma source in unwanted direction (Col. 8 lines 1-7). Chen lacks substantially filling said housing with fluid radiation shielding material to provide a radiation shielding around said aperture. Griebel discloses a modular assembly for a bulk material containing the shielding material in the entire housing (Col. 2 lines 16-49). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to fill the housing with fluid radiation shielding material since it is useful everywhere of the housing.

With respect to Claim 15, in view of the assembly in Griebel (Figs. 3 & 5), the radiation shielding is cast neutron shielding poured into the housing as a liquid in a sequence of steps including (a) filling a first portion of the base 10 of the housing with cast neutron shielding; (b) positioning a moderator insert and filling a second portion 18 of the housing with cast neutron shielding; and (c) fitting the radiation detector assemblies to the upper portion 12 of the housing and making a further pour of cast neutron shielding to substantially fill the housing.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mindy Vu whose telephone number is 571-272-8539.

The examiner can normally be reached on M-F 9am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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